CLAIMS

What is claimed is:

5   1.   A method for generating a halftone image comprising:

choosing a set of allowed colors;

processing a color value;

quantizing said processed color value in a distorted device

independent color space according to said set of allowed colors;

10   diffusing quantization errors in device dependent color space;

outputting a halftone pixel according to said quantizing step.

2.   A method according to Claim 1 wherein, said distorted color space is

CIELab colorspace.

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3.   A method according to Claim 1 wherein, said output pixel is a CMYK

halftone pixel.

4.   A method according to Claim 1 wherein, said set of allowed colors

20   corresponds a given tone of said device dependent colorspace.

5.   A method according to Claim 1 wherein, said output pixel is a RGB

halftone pixel.

6. A method according to Claim 1 wherein, a look up table is used to compute said quantization step.

7. A method according to Claim 1 wherein, said distorted device independent color space is weighted to discourage luminance fluctuations.

8. A method for generating a halftone image comprising:
using the input tone to choose from a set of lookup tables;
processing a color value;
quantizing said processed color value by table lookup using the chosen lookup table.
diffusing quantization errors in device dependent color space
outputting halftone pixel according to said quantizing step.

9. A method according to Claim 8 wherein, said set of lookup tables corresponds to the tone of said device dependent color space.

10. A method according to Claim 8 wherein, said output pixel is a CMYK halftone pixel.

11. A method according to Claim 8 wherein, said output pixel is a RGB halftone pixel.

12. A method for generating a halftone image comprising:
choosing a set of allowed colors;

processing a color value;

quantizing said processed color value in a distorted device

independent color space according to said set of allowed colors;

diffusing quantization errors in device dependent color space;

5 outputting clustered halftone pixels according to said quantizing step;

13. A method according to Claim 12 wherein, said output is fedback to

quantizing step.

10 14. An apparatus for generating a halftone image comprising:

a chooser for choosing a set of allowed colors;

a processor for processing a color value;

a quantizer for quantizing said processed color value in a distorted

device independent color space according to said set of allowed colors;

15 a diffuser to diffuse quantization errors;

an output device for outputting a halftone pixel according to said

quantizing step.

15. An apparatus according to Claim 14 wherein, a look up table is used

20 for quantizing said color value.

16. An apparatus according to Claim 14 wherein, said distorted color

space is CIELab colorspace.

17.   An apparatus according to Claim 14 wherein, said output pixel is a CMYK halftone pixel.

18.   An apparatus according to Claim 14 wherein, said set of allowed colors corresponds to a given tone of said device dependent color space.